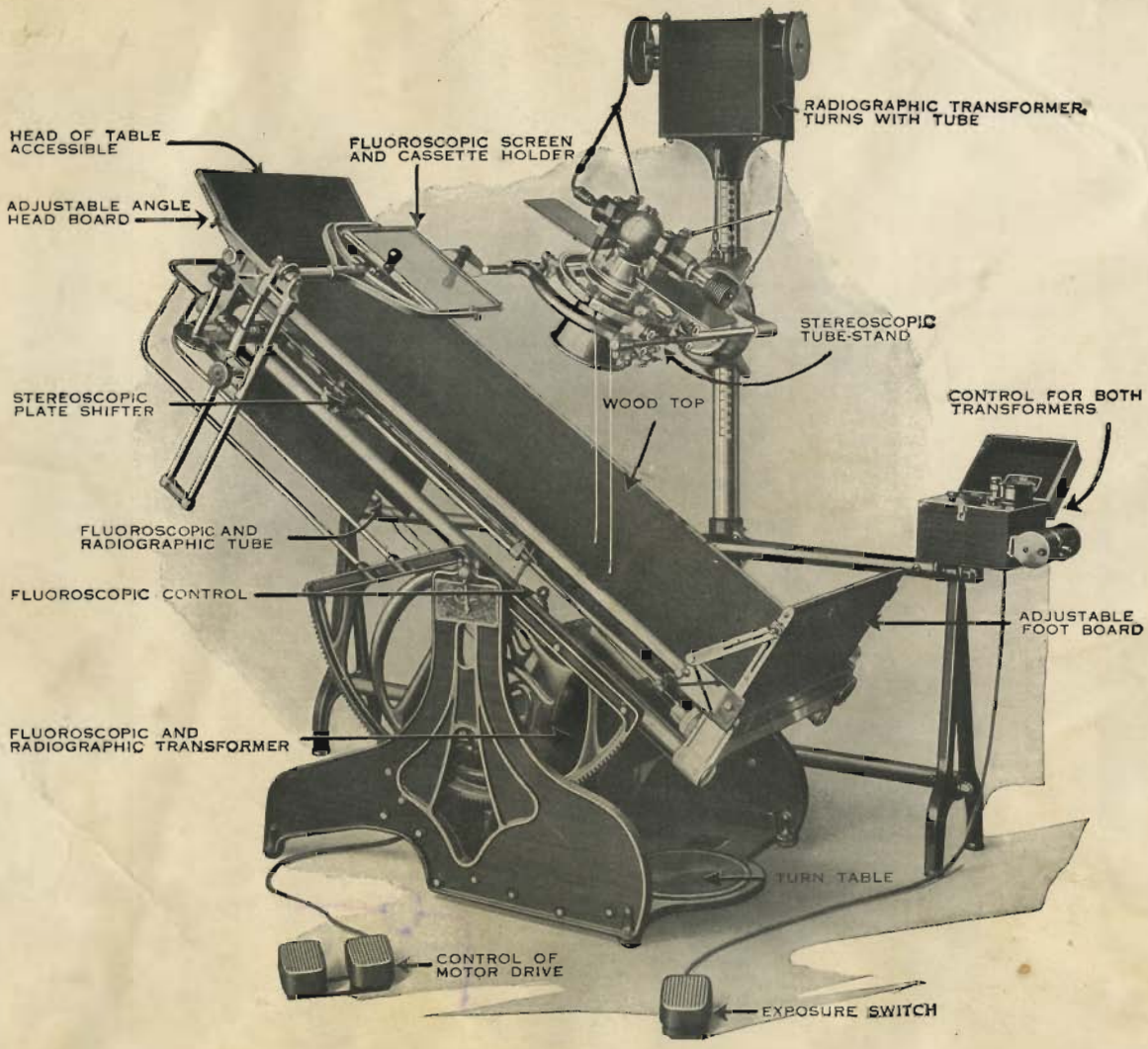
Clinx

TROLLEYLESS X-Ray Plant



U. S. Patents
December 19, 1911; April 22, 1913; February 29, 1916; August 7, 1917.
Foreign Patents. Other Patents Pending.

Campbell ELECTRIC CO. LYNN, MASS

Service Stations in Principal Cities

MEDAL OF HONOR
HIGHEST AWARD
X-ray and High Frequency Apparatus
Panama-Pacific International Exposition
San Francisco, 1915

Campbell Electric Co.

Trolleyless Clinix X-Ray Plant

Radiography—Fluoroscopy
Stereoscopy—Orthodiagraphy
Vertical—Horizontal—Angular—Trendelenburg Position

Fifteen Points on the Clinix

1—Takes the place of radiographic table, horizontal fluoroscope, vertical plate changer, vertical fluoroscope, trolley system, interrupterless or other transformer and control.
2—Self-excited with capacity sufficient to fluoroscope or radiograph any part of the body as attested by the U. S. Army Manual and the Eastman X-ray Exposure Rule.
3—Head of table drops to Trendelenburg position for noting displacement of stomach, intestines, fluids, etc.
4—Motor-driven so that patient is carried automatically from vertical to Trendelenburg or to intermediate positions.
5—After locating part on fluoroscopic screen, plate made for permanent record by same tube under table.
6—No shifting, lifting and climbing patients from one piece of apparatus to another.
7—No overhead trolley and dangerous dangling reels.
8—No corona to light up room and kill fluoroscopic image.
9—No nitrous oxide from trolley to poison and sicken operator.
10—Wood top.
11—Self-rectifying tubes, easiest and surest in operation.
12—Head of table accessible and free from all wires.
13—Light weight, easily movable tube carriage.
14—Fluoroscopic Screen has transverse as well as longitudinal movement with tube.
15—To relocate the apparatus of the X-ray laboratory just move the **Clinix,** that's all.

The Reversible Motor Drive

In place of a variable manual movement for tilting, the table provides a gradual, steady, *handfree* and reproducible means for changing the angle of the Patient, thereby delicately arriving at the different degrees of gravity for infiltration of opaque meals during observation of gastrointestinal areas under the Fluoroscope—thus, not only are obstructions observed but the resistance to the gravity infiltration of the opaque meal (*vital in determination of malignancy*) is comprehended by the degree of angle of the tilt as per the Angle Indicator on the side of the **Clinix.**

This is the only Transformer Type Tube Tilt Table operated in this Electrical manner and is only one of many features found only in the **Clinix.**

If you are a Specialist, you can become a Better Specialist by using a **Clinix.** *If you are a General Practitioner, you can become a Better General Practitioner by using a* **Clinix.**

Children, Nervous and Insane Cases

The roentgenologist knows that a vital requisite to the production of a perfect radiograph is absolute immobility of patient. In using the old system of interrupterless transformer, and trolley system, a nervous woman, a child or insane patient is often well-nigh frightened to death by the snapping of sparks, whir of the rectifier, crackling overhead, and the banging of switches, *just at the very instant when absolute quietness is necessary.* All this is avoided by use of the **Clinix,** which is characterized by a prominent New York roentgenologist as an absolute necessity for children and insane cases.

Space Required by the Clinix

The room should have a ceiling height, in the clear, of not less than seven feet six inches (7′ 6″). The actual floor space occupied by the **Clinix** is eight feet in length by three feet in width (8′ x 3′), but to allow for swing and overhang, a floor space measuring eight feet five inches in length by four feet three inches in width (8′ 5″ x 4′ 3″) should be provided.

Contrast this space required by the **Clinix,** *with that required under the old system with three or four rooms literally filled with a large assortment of miscellaneous pieces of apparatus and the ceilings and walls loaded with trolley wires, high tension switches, transformers, instruments and all the dangling reels.*

Weight Boxed for Shipment, 2000 pounds, 115 cubic feet.

Clinix

As to Overhead Trolley Systems

The danger lies, not so much from the trolley itself as it does from the many **dangling appurtenances** thereto, such as trolley reels, etc., hanging down ready to deal some poor unsuspecting person a jolt in the head, in the darkness of the fluoroscopic room.

A street-car trolley carries only **550 Volts,** while the trolley of the X-ray room carries from **50,000 to 100,000 Volts.** *In the modern system of deep therapy, 200,000 Volts is required, therefore deep therapy should be kept out of radiographic and fluoroscopic rooms.*

The current used for electrocution of criminals is of only about 2000 Volts. In other words, the **overhead trolley** carries **25 to 50 times the voltage used to electrocute.** This is why this current should be confined within safe bounds and is one of the reasons why — The **Clinix Trolleyless** X-ray Plant.

Metal Tables

In the **early days of electric wiring** of buildings, the wires were encased in **conduits and mouldings of fibre, wood** and other insulating materials. Many accidental deaths were caused by electric shock and many fires resulted on account of defective insulation without safe path for the current to the ground.

The **modern system** of electrical installation requires the use of conduits, junction and outlet boxes, fixtures and fittings entirely of metal, permanently grounded. In case of failure of the insulation, these metal casings provide "the path of least resistance" which electricity will always follow rather than take a more circuitous path through a human body or through some inflammable substance.

The Clinix Table

with exception of the top which is of wood, is made entirely of metal. In case of **accidental leakage** of high tension current from tube or connections under table, **it passes into the metal of the table and thence to the ground** instead of into patient and through operator to ground as might be the case with a wood or insulated table.

THE CLINIX TUBE STAND AND TRANSFORMER ARE GROUNDED to table so that **current sparking from tube must pass to metal of stand,** providing the ends of tube and wires connected to same are kept at least 12 inches from patient, which can be assured by mounting insulating fenders on ends of tube and by warning and watching patient.

To watch and guard patient, the operator must be near at hand, and this is another reason why — The **Clinix.**

THE CLINIX MAY BE USED IN CONNECTION WITH an interrupterless transformer and overhead trolley system, but this method is not necessary nor desirable and is rapidly becoming obsolete. The purchasing agent of the Board of Public Health of one of the largest cities in the U. S., a physician of twelve years practical experience in the design and use of X-ray apparatus, makes the statement in commenting on the **Clinix** — "Its price is about $1500 less than separate piece equipment would cost, which would not be as efficient as the **Clinix** and it will do ninety-nine per cent of all the work of any large hospital. In a few years you won't be able to give interrupterless transformers away."

NINETY-EIGHT PER CENT (98%) OF THE WORK of an X-ray laboratory is radiography and fluoroscopy, which can be done better and quicker with the **Clinix** than by any other known method. The other two per cent (2%) of the work is therapy, of which fully one-half is superficial and within the range of the **Clinix.** The remainder, or only one per cent (1%) of the work of the general laboratory, is deep therapy, requiring higher spark gap than six inch (6″) and should be done in a separate department with **special** protection of sheet lead and with a **special** high gap deep therapy transformer capable of supplying a **special** treatment X-ray tube with three to five milliamperes (3 to 5 ma.) at a fourteen-inch (14″) gap for practically continuous operation. Such high voltage apparatus requires special safety precautions to guard against both accidental electrical shock from the overhead trolley system and connections and X-ray burns from the highly penetrating X-rays, and therefore has no place in the room where ninety-nine per cent (99%) of the work is radiography, fluoroscopy and superficial therapy, requiring less than a six-inch (6″) gap.

In Commendation *of the* Clinix

A prominent Roentgenologist of Pittsburgh, Pa., says:

Campbell Electric Co.,
Lynn, Mass.

Gentlemen:

In answer to your inquiry as to how we are getting along with our Clinix outfit, would say that I am very well pleased, indeed, with this piece of apparatus. Since its installation, I have used it for all fluoroscopy and radiographic work done in our laboratory. The outfit displaced a 10 K. W. Transformer of well-known make. Up to the present time, we have been able to do everything that we did with the large transformer more easily, and, as far as we can see, with better results. If anything, the quality of our radiographs is better than it has ever been and we have reduced the time of exposure a trifle from what we were using before.

For the last two years on our 10 K. W. transformer, we have been using 30 M. A. tubes, operating at about 35 M. A., with a back-up of 60 K. W. With the Clinix outfit, we are using 30 M. A., with 5-inch back-up, and time of exposure is a little less than our previous technique. When we put this outfit in, we were afraid we would not be able to make our chest plates fast enough, and also anticipated the same trouble with gastrointestinal work and with infants. We have not had any difficulty in any of this work. Our gastrointestinal exposures are a trifle shorter than they used to be with 50 M. A. and a standard Coolidge tube. They vary from one-third of a second to a second. We are making our chest plates in ¼ to ⅝ of a second, using, of course, double screen with a film, and we have made pictures of infants for chest, or foreign body, or something of that sort, in 1-20 of a second. Fluoroscopic work has been perfectly satisfactory, and we are able to see just as much as we ever were with any transformer.

Taken altogether, my experience to date with this Clinix outfit is very satisfactory.

Yours very truly,

Extract from a letter sent to the Henry Ford Hospital:

"I think the Campbell **Clinix** outfit is the finest piece of apparatus to be had. I believe it to be danger-free, because of the absence of overhead wire and trolleys. It is noiseless in operation and very easy to operate."

An eminent Doctor of Jacksonville, Fla., says:

"The noiseless operation of the table is much appreciated by the patient. It is of exceedingly great value in the study of the duodenum and the appendix, as a change of position can be readily achieved, with the patient continuously under observation."

A noted X-ray specialist of New York, writes:

"I think the **Clinix** is, without any exception, the most satisfactory apparatus I have in my office from both the electrical and mechanical standpoint and from the quality of the work produced. It requires but small space as compared with the other machines and is as near fool-proof as I can possibly imagine.

A noted Boston roentgenologist makes this statement:

"The radiographs produced by the **Clinix** are vastly richer in diagnostic material than those produced by any of our interrupterless transformers, and we are practically certain of a good radiograph every time, which is not so of the interrupterless transformer work."